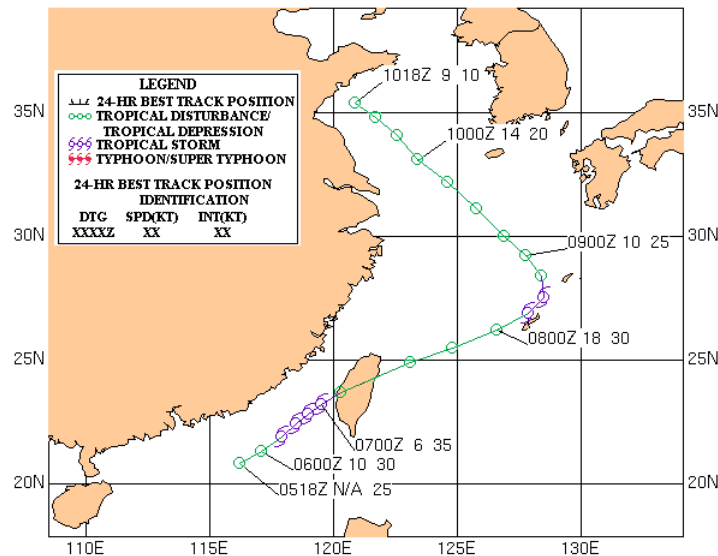


Tropical Storm Rachel (13W)

Tropical Storm (TS) Rachel (13W), the 13th 1999 Northwest Pacific Ocean tropical cyclone warned on by JTWC, developed in the South China Sea, intensified to a tropical storm, moved northeastward over Taiwan, and dissipated after only 36 hours later. This cyclone then regenerated as it moved into the East China Sea toward Okinawa and then turned northwestward, to dissipate over the Yellow Sea 5 days after initial development.

TS Rachel (13W) formed approximately 140 nm southeast of Hong Kong on 5 August. JTWC issued the first warning on TS Rachel at 060900Z August. By 061200Z August, the cyclone had reached a maximum intensity of 35 kt. The system weakened significantly as it moved over Taiwan, then re-intensified again to a maximum intensity of 35 kt by 080600Z August. Subsequently, cooler sea surface temperatures, and increasing vertical wind shear caused TS Rachel to dissipate over the Yellow Sea at 101800Z August.

TS Rachel (13W) developed in the monsoon trough just off the coast of China. The suspect area which eventually became TS Rachel was first mentioned on the 040600Z August Significant Tropical Weather Advisory (ABPW) with poor potential for development. After 2 days, a Tropical Cyclone Formation Alert (TCFA) was issued for the area. At 060900Z the first warning was issued, as scatterometry data indicated 30 kt winds associated with the tropical cyclone. TS Rachel tracked northeastward over Taiwan, where it dissipated over the Chungyang Mountain range. JTWC issued a final warning on the system at 070900Z August. JTWC subsequently regenerated the cyclone as it moved into the East China Sea and tracked toward Okinawa at 17 kt. TS Rachel (13W) re-intensified to 35 kt as it passed near Okinawa, and turned to the northwest. TS Rachel then moved into cooler waters and increasing vertical wind shear, causing the cyclone to rapidly weaken. JTWC issued the 14th and final warning at 092100Z August.



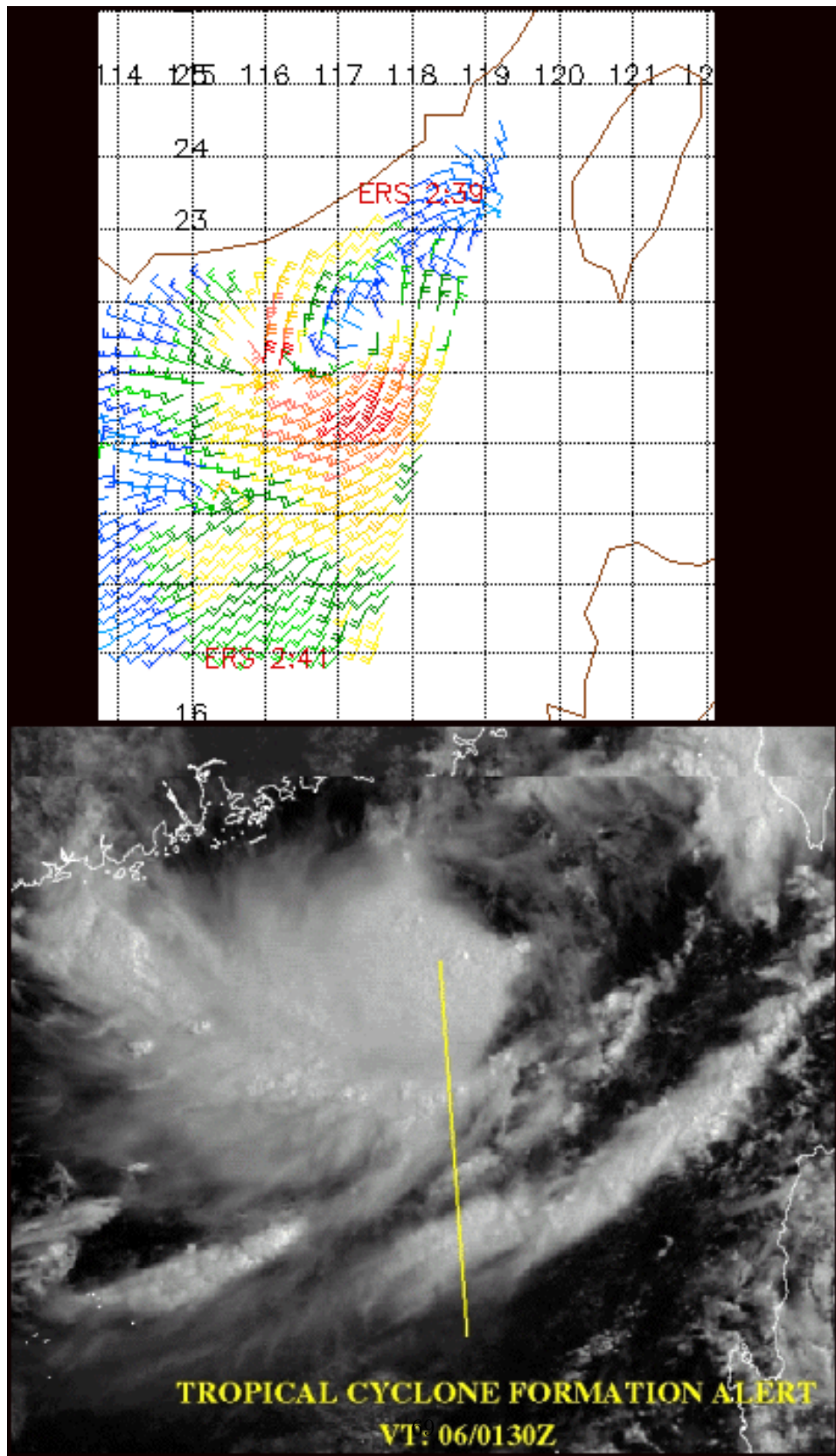


Figure 1-13-1. 060240Z August scatterometry pass, and 060130Z August visible imagery of Tropical Depression 13W which later developed into TS Rachel (13W). Satellite analysis indicated 20 to 25 kt (Dvorak T1.0) through 061025Z. The scatterometry pass however, indicates 30 to 35 kt winds already at 060240Z. The ERS-2 scatterometer has allowed for more accurate analysis of tropical cyclones. This capability will be further exploited as QuickScatt becomes operational.